CORRESPONDENCE.

Protective Coloration.

EDITORS OF 'THE AUK':—

Dear Sirs: — I wish to record in 'The Auk' the main results, up to date, of my study of Protective Coloration. These were all foreshadowed in my first article in 'The Auk' (XIII, 1896, pp. 124–129, 10 illustr.), and, later, in a paper published in the Transactions of the Entomological Society of London,[1] I was able to present the subject of patterns in a much more developed shape. What I now wish to record is mainly what I communicated to the annual meeting of the A. O. U. in 1904, but which the reporters failed to get, so that it remains, as yet, unpublished. It is this: It now proves to be the case that all patterns and colors, upon all animals whatsoever, except such as live in the dark, or are neither predatory nor preyed upon, are, *when seen against the background against which their enemy (or prey) would see them at the critical moment*, in expressibly *perfect pictures* of this background, and therefore obliteratively colored. The marvellous perfection of the scene thus painted on each aminal is, of course, only appreciable by painters. It is such that the different parts of any resplendent bird's costume, peacock, wood duck, or blue jay, make, when separated, and merely slightly rearranged, a scene of their habitat that defies, in its realism, all painters.

The one thing that has kept even artists from beginning to see this fact is that no one has perceived that obliterative coloration means *matching a certain background*, not a general resemblance to surroundings. This old phrase means actually nothing. For instance, a white heron and a brown frog may be in the *same surroundings*, yet the heron sees the brown frog against brown mud, while the frog sees the white heron against the *sky*! — the nearest match possible, and one which effaces the heron's telltale upper contours, especially when the sky is white, or at night. Till now, however, observers have regarded the frog and heron, and discussed them, from *men's* standpoint, and called *one* protectively colored, and one conspicuous. This principle is universal in nature.

My son and I are now sending to the press a book demonstrating my results up to now. Fortunately it *involves no theory* whatever, but is all shown to be susceptible of absolute occular proof. It does not *say* that patterns and countershading *exist to conceal animals*, but shows that they do always conceal them.

ABBOTT H. THAYER.

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[1] Protective Coloration in its Relation to Mimicry, Common Warning Colors, and Sexual Selection. Trans. Entomol. Soc. of London, 1903, Part IV, pp. 553–569. Dec., 1903.